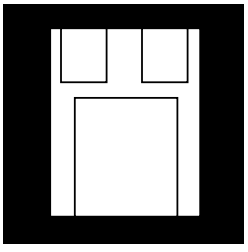
SURFACE MOUNT LOW DROPOUT POSITIVE FIXED VOLTAGE REGULATORS



Three Terminal, Low Dropout, Positive Fixed Voltage, 7.5A, 5A, 3A And 1.5A Regulators

FEATURES

- Hermetic Surface Mount Package
- Operates Down To 1V Dropout, 1.5V @ Max. Current
- .015% Line Regulation
- .01% Load Regulation
- 1% Reference Voltage
- Electrically Equivalent To LT1083, 84, 85, And 86
- Available Hi-Rel Screened

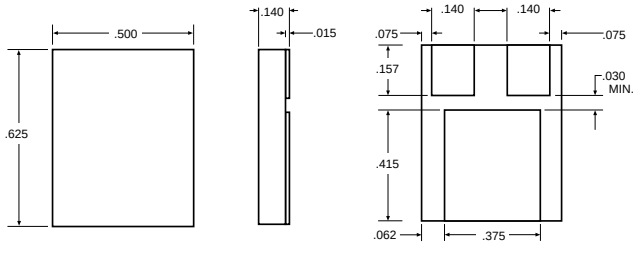
DESCRIPTION

These three terminal positive fixed voltage regulators in surface mount packages are designed to provide 7.5A, 5A, 3A, and 1.5A with higher efficiency than conventional voltage regulators. These devices are designed to operate to 1 Volt input to output differential and the dropout voltage is specified as a function of load current. These devices are ideally suited for Hi-Rel applications where surface mount, small size, hermeticity and high reliability are required.

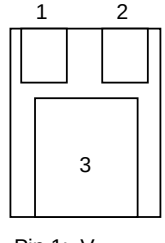
ABSOLUTE MAXIMUM RATINGS @ 25°C

Input Voltage . . . . . 35 V
Operating Junction Temperature Range . . . . . - 55°C to + 150°C
Storage Temperature . . . . . - 65°C to + 150°C
Output Current - OM183-5, 12, 15NM . . . . . 7.5 A
OM184-5, 12, 15NM . . . . . 5 A
OM185-5, 12, 15NM . . . . . 3 A
OM186-5, 12, 15NM . . . . . 1.5 A

MECHANICAL OUTLINE



PIN CONNECTION



Pin 1: V_{IN}
Pin 2: Ground
Pin 3: V_{OUT}

3.5

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage						
OM183/4/5/6 - 5 V	I_{OUT} = 0 mA, T_j = 25°C, V_{IN} = 8 V		4.95	5.0	5.05	V
	0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$, 6.5 V ≤ V_{IN} ≤ 30 V	•	4.90	5.0	5.10	V
OM183/4/5/6 - 12 V	I_{OUT} = 0 mA, T_j = 25°C, V_{IN} = 15 V		11.88	12.0	12.12	V
	0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$, 13.5 V ≤ V_{IN} ≤ 30 V	•	11.76	12.0	12.24	V
OM183/4/5/6 - 15 V	I_{OUT} = 0 mA, T_j = 25°C, V_{IN} = 20 V		14.85	15.0	15.15	V
	0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$, 17.5 V ≤ V_{IN} ≤ 30 V	•	14.70	15.0	15.30	V
Line Regulation						
OM183/4/5/6 - 5 V	I_{OUT} = 0 mA, T_j = 25°C, 6.5 V ≤ V_{IN} ≤ 20 V			0.5	10	mV
				1.0	10	mV
	6.5 V ≤ V_{IN} ≤ 30 V	•		2.0	25	mV
OM183/4/5/6 - 12 V	I_{OUT} = 0 mA, T_j = 25°C, 13.5 V ≤ V_{IN} ≤ 25 V			1.0	25	mV
				2.0	25	mV
	13.5 V ≤ V_{IN} ≤ 30 V	•		4.0	60	mV
OM183/4/5/6 - 15 V	I_{OUT} = 0 mA, T_j = 25°C, 17.5 V ≤ V_{IN} ≤ 25 V			2.0	50	mV
				4.0	50	mV
	17.5 V ≤ V_{IN} ≤ 30 V	•		8.0	100	mV
Load Regulation						
OM183/4/5/6 - 5 V	V_{IN} = 8 V, 0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$,			5	20	mV
	T_j = 25°C	•		10	35	mV
OM183/4/5/6 - 12 V	V_{IN} = 15 V, 0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$,			12	36	mV
	T_j = 25°C	•		24	72	mV
OM183/4/5/6 - 15 V	V_{IN} = 20 V, 0 ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$,			20	40	mV
	T_j = 25°C	•		40	100	mV
Current Limit						
OM183 - 5 V	V_{IN} = 10 V		8.0	9.5		A
OM183 - 12 V	V_{IN} = 17 V		8.0	9.5		A
OM183 - 15 V	V_{IN} = 20 V		8.0	9.5		A
OM184 - 5 V	V_{IN} = 10 V		5.5	6.5		A
OM184 - 12 V	V_{IN} = 17 V		5.5	6.5		A
OM184 - 15 V	V_{IN} = 20 V		5.5	6.5		A
OM185 - 5 V	V_{IN} = 10 V		3.2	4.0		A
OM185 - 12 V	V_{IN} = 17 V		3.2	4.0		A
OM185 - 15 V	V_{IN} = 20 V		3.2	4.0		A
OM186 - 5 V	V_{IN} = 10 V		1.5	1.8		A
OM186 - 12 V	V_{IN} = 17 V		1.5	1.8		A
OM186 - 15 V	V_{IN} = 20 V		1.5	1.8		A
Dropout Voltage						
OM183/4/5/6 - 5 V	ΔV_{OUT} = 50 mV, I_{OUT} = $I_{FULL\ LOAD}$			6.3	6.5	V
OM183/4/5/6 - 12 V	ΔV_{OUT} = 120 mV, I_{OUT} = $I_{FULL\ LOAD}$			13.3	13.5	V
OM183/4/5/6 - 15 V	ΔV_{OUT} = 180 mV, I_{OUT} = $I_{FULL\ LOAD}$			17.3	17.5	V
Quiescent Current	V_{IN} ≤ 30 V			5.0	14.0	mA
Thermal Regulation	T_A = 25°C, 30 ms pulse					
OM183 - 5/12/15 V				0.002	0.01	%/W
OM184 - 5/12/15 V				0.003	0.015	%/W
OM185 - 5/12/15 V				0.004	0.02	%/W
OM186 - 5/12/15 V				0.008	0.04	%/W
Ripple Rejection	f = 120 Hz, C_{OUT} = 25 µF Tantalum					
	I_{OUT} = $I_{FULL\ LOAD}$					
OM183/4/5/6 - 5 V	V_{IN} = 8 V			63		dB
OM183/4/5/6 - 12 V	V_{IN} = 15 V			55		dB
OM183/4/5/6 - 15 V	V_{IN} = 20 V			60		dB
Thermal Resistance	Junction-To-Case OM183 - 5/12/15NM				2.1	°C/W
	OM184 - 5/12/15NM				3.1	°C/W
	OM185 - 5/12/15NM				4.1	°C/W
	OM186 - 5/12/15NM				5.3	°C/W
Lead Temperature	5 Seconds at Case				225	°C

The • denotes the specifications which apply over the full operating temperature range.